

Silicosis: The silent construction disease

Construction zones are dangerous; we all know this. From the gigantic machines lifting large objects to the hazards of the materials being worked with, a jobsite is no picnic. We wear hardhats to protect our heads and gloves for our hands, but what are we doing to protect our lungs?

Killing us softly

Silicosis—a disabling dust-related disease of the lungs—affects thousands of construction workers each year, killing about 300 annually. Often showing no symptoms for many years, this silent disease is caused by breathing in small airborne particles of crystalline silica—the basic component of sand, quartz, and granite rock. According to former Secretary of Labor Robert B. Reich, “more than 1 million workers across the country are exposed to silica dust on the job.” This staggering number doesn’t seem to faze workers or employers as unsafe construction practices continue to be used across the country.

Silicosis has various degrees of severity: acute, accelerated, and chronic. Acute silicosis occurs after extremely high exposure to silica in a short timeframe, such as sandblasting in an enclosed area without a mask. Symptoms can present themselves quickly in a matter of weeks, or lie dormant for as long as five years. After high concentrations of silica, accelerated silicosis can develop, although very rare. It develops within five to 10 years. Chronic, the most common form of silicosis, is the result of long-term exposure to low silica concentrations. It may take up to 20

years before scarring can be seen on X-rays.

The danger zones

A variety of construction activities can create airborne silica—or silicon dioxide (SiO₂). Sandblasting, rock drilling, stonecutting, drilling, quarrying, brick/block/concrete cutting, gunite operations, cement products manufacturing, demolition operations, hammering, chipping, and sweeping concrete or masonry, and tunneling operations are just a few daily jobsite operations that can make a worker at risk for breathing this human carcinogen.

Say “yes” to your lungs

OSHA’s Hazard Communication Standard, 29 C.F.R. 1910.1200 requires companies to advise workers and downstream users of the potential health and physical hazards associated with substances in the workplace. OSHA recommends the following steps to protect yourself and/or your employees on the jobsite:

- Always use the dust control system and keep it in good maintenance.

- When sawing concrete or masonry, use saws that provide water to the blade.

- During rock drilling use water through the drill stem to reduce the amount of dust in the air.

- Use dust collection systems, which are available for many types of dust generating equipment.

- Use local exhaust ventilation to prevent dust from being released into the air.

- Minimize exposure to nearby

workers by using good work practices.

- Use abrasives containing less than 1% crystalline silica during abrasive blasting to prevent harmful quartz dust from being released in the air.

- Measure dust levels in the air.

- Respirators should only be used after dust controls are in place. Respirators should not be the primary method of protection. If controls cannot keep dust levels



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below the NIOSH Recommended Exposure Level (REL) then respirators should be used. Select respirators that provide enough protection. Keeping respirators fit for use requires continual maintenance.

In addition to this list, you can check out respiratory protection programs outlined in the NIOSH Guide to Industrial Respiratory Protection.

Protection is proactive

Just as important as protecting the head, hands, and exposed skin, so is shielding the lungs from microscopic particles. Make sure to wear the appropriate mask for the job at hand. Check out MSA’s guide to respirators at www.msanet.com for help. Remember: the few seconds each day it takes to put on a mask can mean years in the long run.